

Health Report

There were 855 cases of occupational diseases confirmed in 2008, almost 1.5 times more than in 2007. The overall incidence stood at 36.2 cases per 100,000 persons employed, up from 27.7 cases a year ago. This was mainly contributed by an increase in reported **Noise Induced Deafness (NID)** cases, as a result of greater awareness on the detection and reporting of NID cases from the NID Prevention Programme which was launched in late 2007.

Occupational Diseases

Notification of occupational diseases by doctors and employers is required under the Workplace Safety and Health (Incident Reporting) Regulations. There are 31 notifiable diseases. To facilitate such notifications, OSHD partnered the National Healthcare Group and SingHealth to provide joint specialist clinics in various hospitals and polyclinics. All notifications are investigated to confirm the work-relatedness of the cases, as well as to identify any other employees who may be similarly affected. Appropriate control measures are then recommended to the industry, company and employees concerned.

The occupational disease incidence in 2008 was 36.2 per 100,000 employees, an increase from 27.7 in 2007. The highest number of cases was from the Manufacturing sector, accounting for two-thirds of (66%) of total cases confirmed (Table 3). Within this cluster, close to four-fifths (78%) of the ODs confirmed were from the Metalworking and Manufacture of Transport Equipment¹² sub-sectors. While the former saw a 36% increase in the cases confirmed, the latter recorded more than three-fold jump in 2008 as compared to the previous year. After workforce size was taken into consideration, Manufacture of Transport Equipment posted the highest OD incidence among all sectors (at 908 cases for every 100,000 persons employed). This is 25 times higher than the national OD incidence.

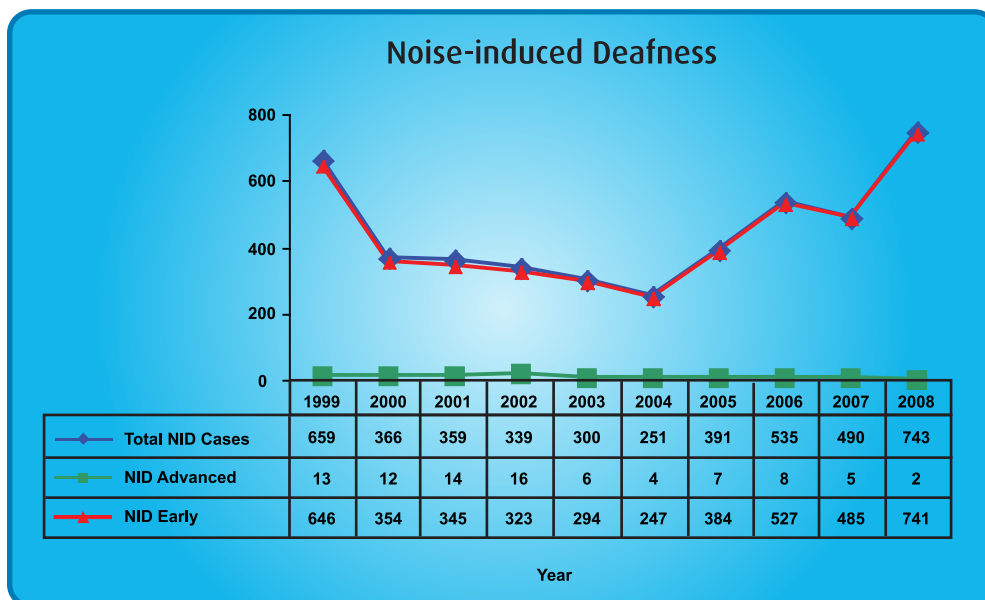
Table 3: Number of Confirmed Occupational Diseases by Industry, 2007 and 2008

Industry	2008	2007
All Sectors	855	602
Construction	56	45
Marine	75	33
Manufacturing	565	359
Breakdown (Partial) :		
Metalworking	244	179
Manufacture of Transport Equipment	198	63
Manufacture of Petrochemical Products	29	5
Manufacture of Rubber & Plastic Products	21	7
Manufacture of Food, Beverages & Tobacco Products	19	26
Manufacture of Electronic Products	18	28
Manufacture of Paper Products & Printing	15	11
Water Supply, Sewage & Waste Management	7	16
Logistics and Transportation	64	79
Hotels and Restaurants	10	6
Veterinary Activities	-	-
Landscape Care & Maintenance Service Activities	-	-
Health Activities	7	8
Other Sectors	71	56

¹² This excludes all shipbuilding and ship repair activities.

Noise-induced Deafness (NID)

NID continued to be the leading occupational disease in 2008, with 743 cases, or 87% of all confirmed occupational disease cases. Most of the NID cases were in the early stages of the disease. Only two employees had severe hearing loss requiring compensation under the Workmen's Compensation Act. The majority of the NID cases (64%) were from the manufacturing sector.



Number of Occupational Diseases by Type, 2007 and 2008

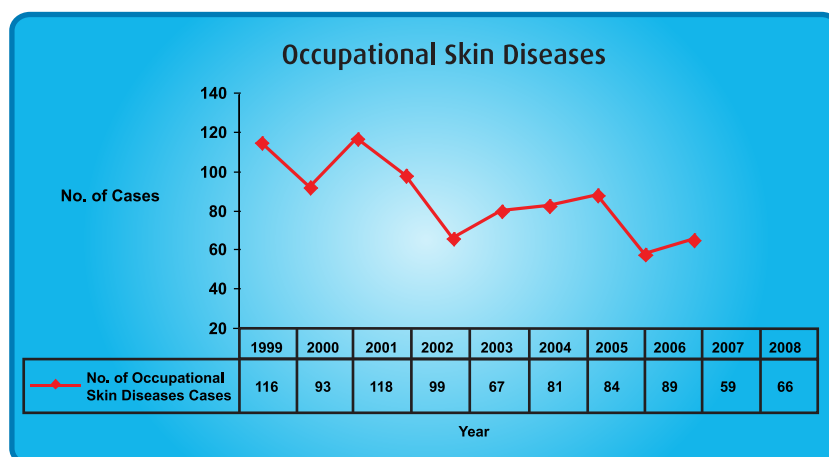
Type of Occupational Diseases	2008	2007
Total	855	602
Noise Induced Deafness (NID)	743	490
Breakdown:		
• Early Stage	741	485
• Advanced Stage	2	5
Occupational Skin Diseases	66	59
Excessive Absorption of Chemicals	11	3
Chemical Poisoning	8	-
Compressed Air Illness	7	2
Barotrauma	5	17
Occupational Lung Diseases	5	3
Work-related Musculoskeletal Disorders	5	25
Mesothelioma	4	-
Others	1	3

Number of Confirmed NIDs in Selected Industries, 2007 and 2008

Industry	2008	2007
All Sectors	743	490
Construction	33	17
Marine	70	30
Manufacturing	528	314
Breakdown (Partial):		
Metalworking	235	167
Manufacture of Transport Equipment	194	60
Manufacture of Petrochemical Products	25	4
Manufacture of Rubber & Plastic Products	21	6
Manufacture of Food, Beverages & Tobacco Products	15	23
Manufacture of Paper Products & Printing	13	10
Manufacture of Electronic Products	11	25
Water Supply, Sewage & Waste Management	7	16
Logistics & Transportation	61	78
Hotels and Restaurants	-	-
Veterinary Activities	-	-
Landscape Care & Maintenance Service Activities	-	-
Health Activities	-	-
Other Sectors	44	35

Occupational Skin Diseases

Occupational Skin Diseases continued to be the second most common occupational disease, with 66 cases in 2008, up from 59 cases a year ago. The Manufacturing sector contributed the most number of cases (33.3%). The most common causative agents were wet work, detergents and oils.



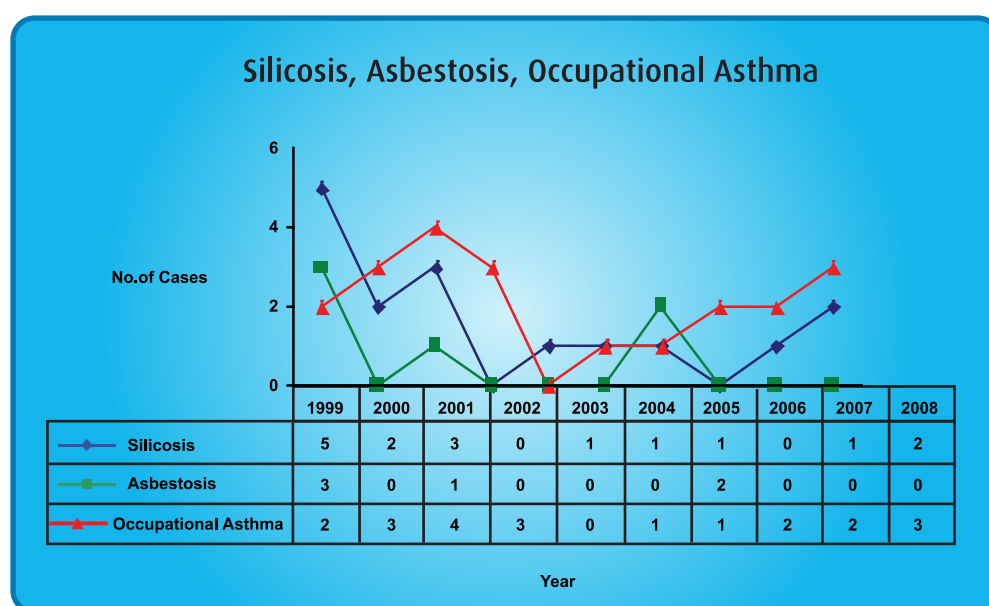
Number of Confirmed OSD by Industry, 2007 and 2008

Industry	2008	2007
All Sectors	66	59
Construction	10	11
Marine	3	1
Manufacturing	22	21
Metalworking	4	11
Manufacture of Electronic Products	4	3
Manufacture of Food, Beverages & Tobacco Products	3	3
Manufacture of Transport Equipment	3	1
Manufacture of Paper Products & Printing	2	-
Manufacture of Non-metallic Mineral Products	2	1
Water Supply, Sewage & Waste Management	-	-
Logistics and Transportation	-	1
Services Allied To Transport of Goods	-	-
Hotels and Restaurants	9	4
Veterinary Activities	-	-
Landscape Care & Maintenance Service Activities	-	-
Health Activities	7	4
Wholesale & Retail Trade	5	1
Real Estate Activities	2	1
Other Sectors	15	17

Top 10 Causative Agents of Occupational Skin Diseases, 2008

Causative Agents	No. of Cases
Top Causative Agents	50
Wet Work and Detergents	19
Oils	8
Rubber	4
Cement	4
Dust	4
Heat	4
Isopropyl ether	3
Solvent	2
Chromium	2

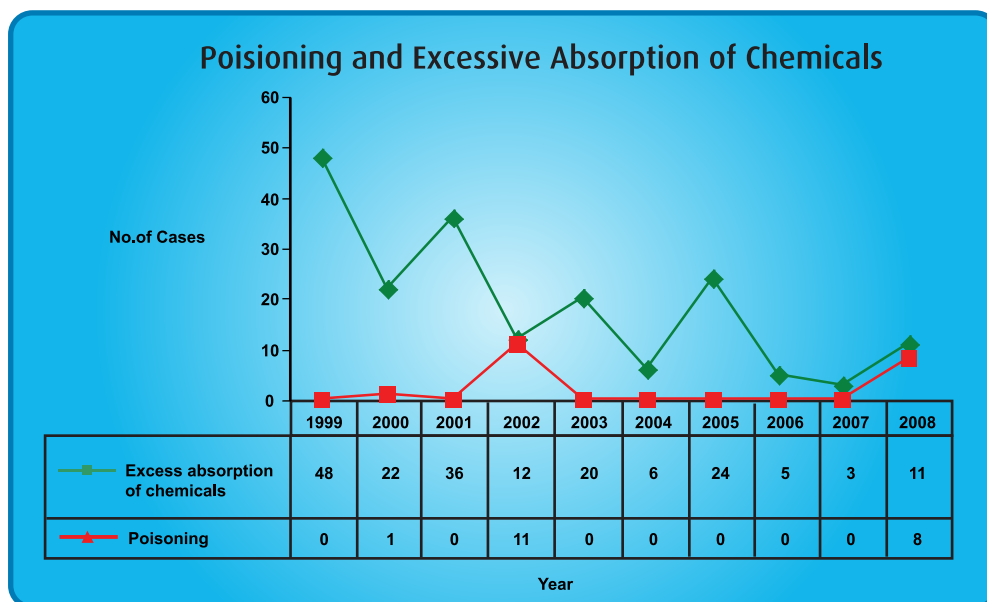
Occupational Lung Diseases



Occupational Asthma due to Chengal Wood Dust

A carpenter was confirmed to have occupational asthma due to chengal wood dust. Chengal wood is a tropical hard wood commonly used in South East Asia. He had no asthma in his 20 years career as carpenter until he started using chengal wood. His sensitivity to chengal wood dust was confirmed by specific inhalation challenge test. His asthma improved after his company stopped using the wood. This is the first case where chengal wood dust was identified as a causative agent for asthma.

Excessive Absorption of Chemicals



Poisoning due to Perchloroethylene

Four workers fainted and another two had giddiness in the compartment of a ship where Perchloroethylene (PCE) was used for cleaning motor parts. One of the workers re-entered the compartment to carry out post cleaning inspection using a cartridge respirator instead of airline respirator and subsequently fainted. The other workers who went to his rescue were also overcome by the fumes. All workers have since recovered. The shipyard was charged and fined for failure to take measures as are necessary to ensure the safety and health of the workers. An advisory note was sent to remind stakeholders to implement control measures for work involving PCE in confined spaces.

Methyl Bromide Poisoning

Two workers were fumigating a warehouse with methyl bromide when one of them developed nausea and giddiness and the other suffered tremors and weakness. Subsequent measurements of methyl bromide during fumigation showed that the exposure levels were excessive. Recommendations included gas monitoring and the use of appropriate personal protective equipment.

Causative Agents for Excessive Absorption

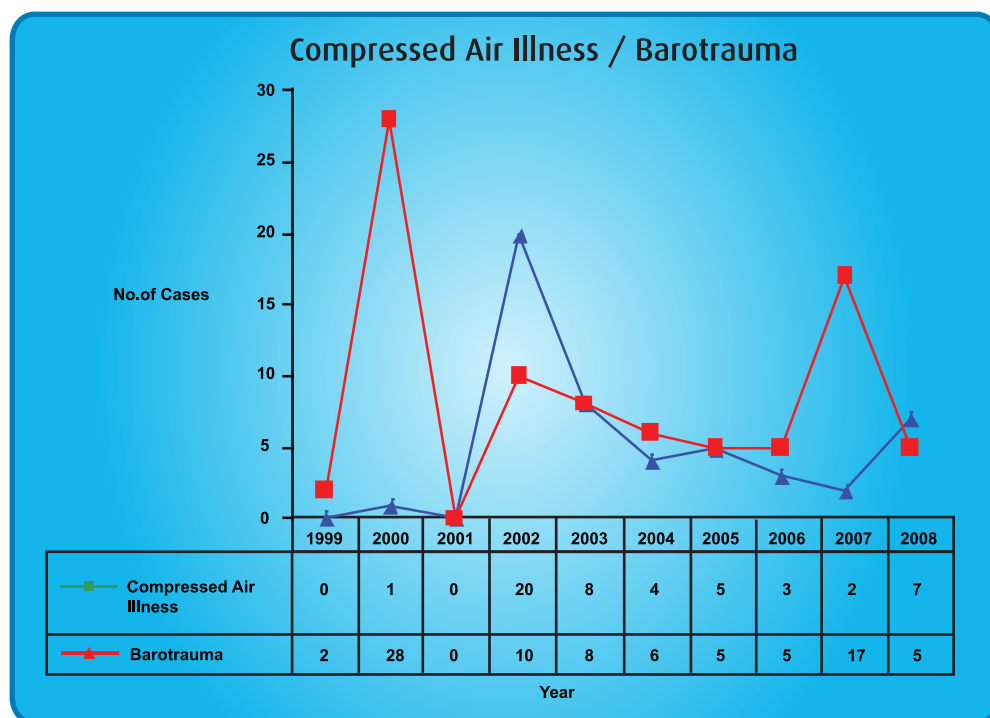
Causative Agent For Excessive Absorption of Chemicals

No. of Cases

Cadium	1
Lead	2
PCE	7
TCE	1
Total	11

Compressed Air Illness

Six compressed air workers for the Circle Line MRT project had Type 1 decompression sickness (mild bends), one developed Type 2 decompression sickness and another four had barotrauma. Workers had to enter the compressed air environment (up to 2.5 bars) during the maintenance of the cutter heads of the tunnel boring machines. A work group has been formed to review and make recommendations to prevent the occurrence of compressed air illness and barotraumas.



Occupational Cancers

Mesothelioma

Four cases of pleural mesothelioma were confirmed. All of them had worked in shipyards before and were exposed to asbestos dust on board ships in the 50s to 80s. Two were female general cleaners; one was a pipe-fitter and the other an electrician.

Monitoring Conditions at Work

Workplaces with hazards listed in the First Schedule in the WSH (General Provisions) Regulations are required to have regular industrial hygiene monitoring. Workplaces with specific hazards require medical monitoring for exposed workers. Data from these medical and industrial hygiene monitoring activities indicate that noise and chemical exposure levels in workplaces remain satisfactory in 2008.

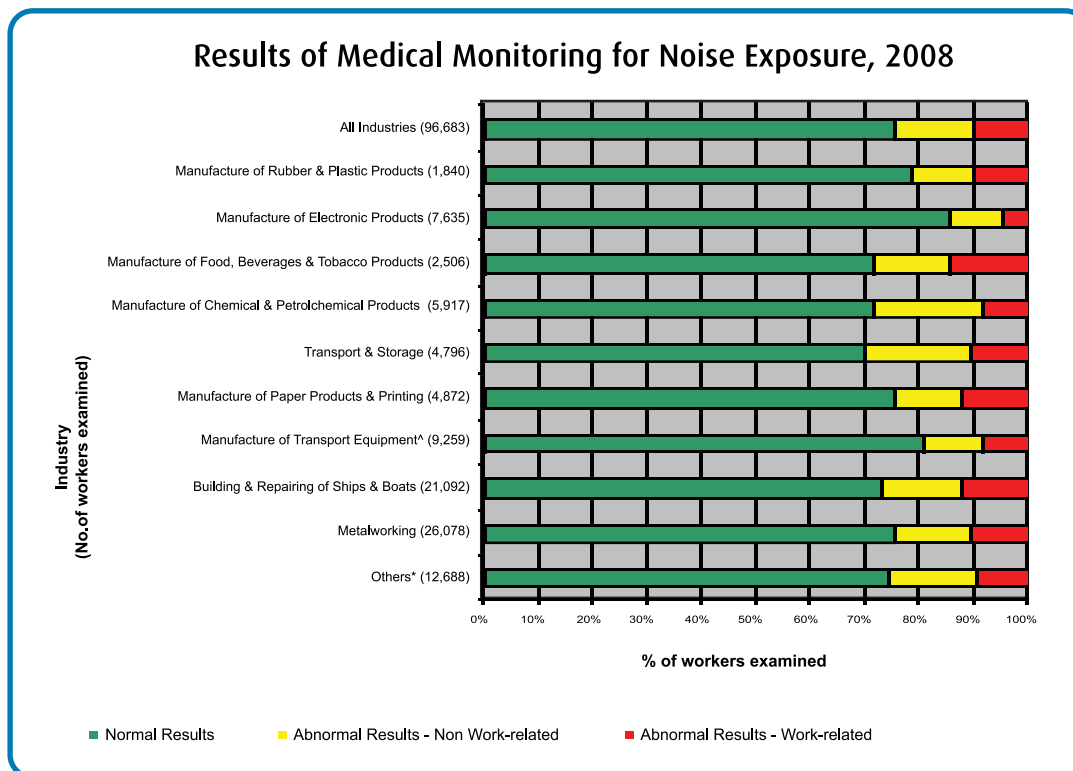
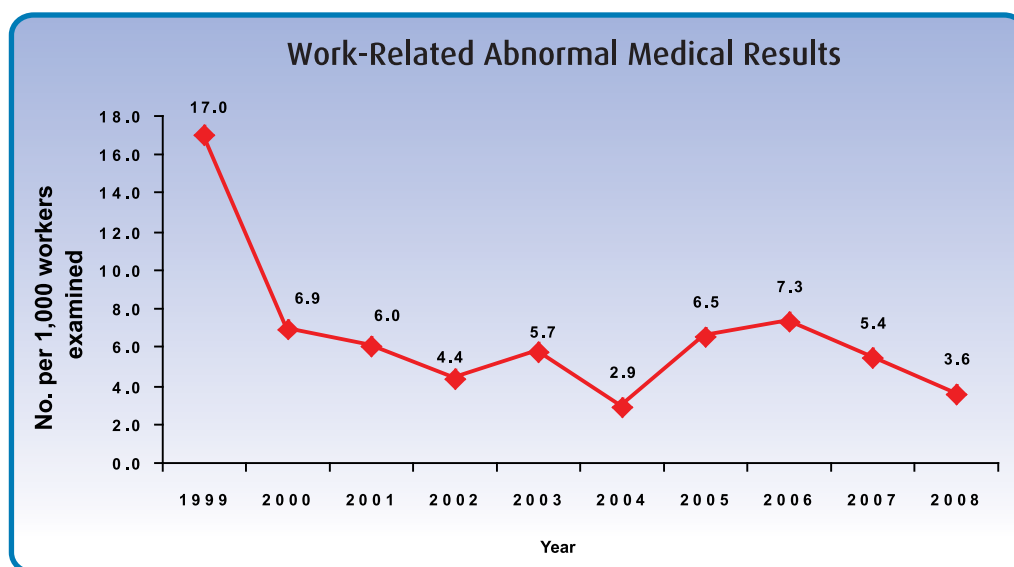
Exposure levels of specific workplace hazards provide a good indicator of the conditions in the work environment. Hygiene monitoring is usually conducted once every three years for noise and annually for chemicals. Medical monitoring is conducted once every six months for lead and organophosphate, and annually for all other hazards. The results of both industrial hygiene and medical monitoring are submitted to OSHD. The Division also conducts detailed industrial hygiene assessments on a selective basis for high-risk workplaces.

Industrial hygiene data from our selective assessments, as well as from companies with in-plant monitoring, is maintained within a National Database for Noise and Chemical Exposure. This enables us to identify high-risk workplaces, evaluate trends in exposure levels and advise employers regarding control measures and appropriate monitoring programmes.

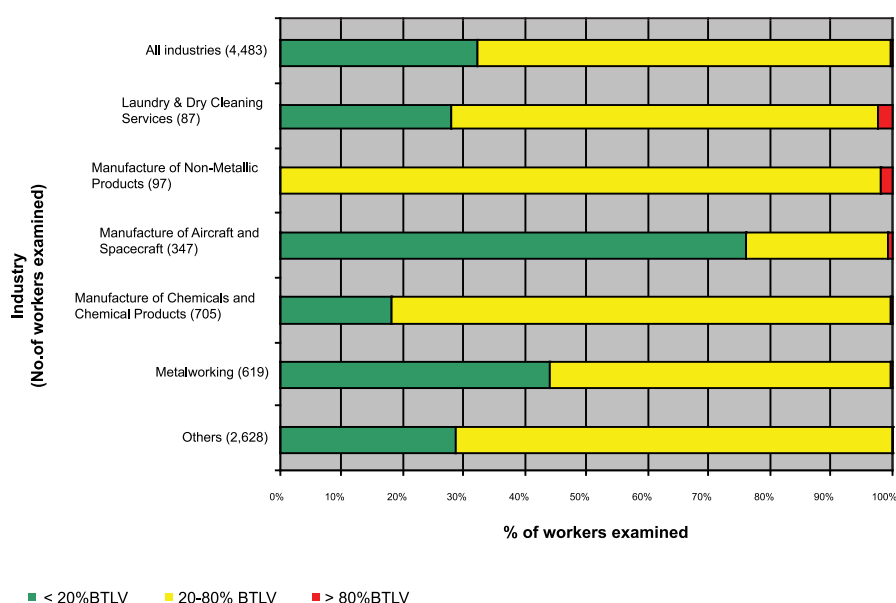
Workers' Health Status

In terms of new work-related abnormal medical results, there was a decrease from 5.4 per 1,000 workers examined in 2007 to 3.6 in 2008.

Detection of work-related abnormal results among workers examined for exposure to noise came mainly from the metal working industries, and shipbuilding and ship repair industries. For exposure to chemicals, a total of 18 workers had biological levels exceeding 80% of the recommended biological threshold limit values (BTLV). These include three workers who were exposed to perchloroethylene from the metal working industry and two from the laundry industry. There were also two workers who were exposed to inorganic lead in a lead stabilizer manufacturing factory.



Results of Biological Monitoring for Chemical Exposure, 2008



Recommended Biological Threshold Limit Values (BTLV)

Hazard	Type of examination	BTLV
Arsenic & its compounds	Urine inorganic arsenic	300 mcg/L
Benzene	Urine s-phenylmercapturic acid (spma)	45 mcg/g creat
	Urine tt-muconic acid (ttma)	1.6 mcg/g creat
Cadmium & its compounds	Blood cadmium	5 mcg/L
Lead (inorganic) & its compounds	Blood lead	50 mcg/dl (male)
		30 mcg/dl (female)
Lead (organic) & its compounds	Urine lead	150 mcg/L
Manganese & its compounds	Urine manganese	50 mcg/L
Mercury & its compounds	Urine mercury	50 mcg/L
Perchloroethylene	Urine trichloroacetic acid	7 mg/L
Perchloroethylene/ Trichloroethylene mixture	Urine trichloroacetic acid	50 mg/L
Sodium silicofluoride	Urine fluoride	10 mg/L
Toluene	Blood toluene	0.05 mg/L
Trichloroethylene	Urine trichloroacetic acid	100 mg/L
Xylene	Urine methylhippuric acid	1.5 g/g creat